Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NICHOLAS S. NOGAR

Appeal No. 1997-1861
Application No. 08/412,235

ON BRIEF

Before WARREN, KRATZ, and DELMENDO, Administrative Patent Judges.

KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 1-3, 5-8 and 10, which are all of the claims pending in this application.

BACKGROUND

Appellant's invention relates to a method of determining the amount of lead in a liquid blood sample. An understanding

of the invention can be derived from a reading of exemplary

claims

1 and 10, which are reproduced below.

1. A method for determining the amount of lead in a liquid blood sample, which comprises the steps of:

a. applying a known volume of blood to be investigated to a lead-free, electrically conducting substrate;

b. drying the blood so applied;

c. analyzing the blood sample to exhaustion using resonant laser ablation, selectively producing thereby an ion count from lead atoms present therein; and

d. integrating the ion count; whereby the integrated ion count is a measure of the lead content.

10. A method for determining the amount of lead in a solid blood sample, which comprises the steps of:

a. placing the blood to be investigated on a lead-free, electrically conducting substrate;

b. analyzing a portion of the blood using resonant laser ablation, selectively producing thereby an ion count from lead atoms present therein;

c. simultaneously analyzing an identical size portion of the blood sample for sodium atom content using the same mass

spectroscopy apparatus as that used in step c,[1] producing thereby an ion count from sodium atoms present therein;

d. obtaining the ratio of the ion count for lead atoms to the ion count for sodium atoms; and

e. determining the sodium concentration in the blood sample.

[1] The reference to step c in claim 10, step c appears to be internally inconsistent. The examiner should review this matter and insure that any corrections that may be necessary are made prior to final disposition of this application.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Schmidt et al. (Schmidt), "LAMMA-Investigations of Biological and Medical Specimens," Scanning Electron Microscopy 1980/II, pp. 623-631 (SEM Inc., AMF O'Hare, Chicago, IL).

Omenetto et al. (Omenetto), "Direct Determination of Lead in Blood by Laser-excited Flame Atomic-Fluorescence Spectrometry," Analyst, Vol. 109, pages 1067-1070 (Joint Research Centre, Chemistry Division, Ispra (Varese), Italy, Aug. 1984).

Fearey et al. (Fearey), "Pulsed Laser Resonance Ionization Mass Spectrometry for Elementally Selective Detection of Lead and Bismuth Mixtures," (Reprinted from Analytical Chemistry, Volume 60, pp. 1786-1790 © American Chemical Society 1988).

Appellant additionally cites the following reference:

Nogar et al. (Nogar),[2] "Chromium Detection by Laser Desorption and Resonance Ionization Mass Spectroscopy," Analytical Chemistry, Volume 64, p. 465 (1992).

Claims 1-3, 5-8 and 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Schmidt in view of Omenetto and Fearey.

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[2] We note that Nogar was referenced by the examiner at page 4 of the final rejection; however, we do not consider Nogar as being before us as evidence of obviousness in our consideration of the examiner's rejection. This is so since the examiner's stated rejection (see answer, numbered pages 3-6) does not list Nogar as part of the evidence being relied upon. See In re Hoch, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970).

OPINION

We have carefully reviewed the respective positions presented by appellant and the examiner. In so doing, we find ourselves in agreement with appellant that the applied prior art fails to establish a prima facie case of obviousness of the claimed subject matter. Accordingly, we will not sustain the examiner's rejection for essentially those reasons advanced by appellant, and we add the following primarily for emphasis.

The examiner (answer, page 5) acknowledges that Schmidt does not teach " . . . measurement of lead in blood, or use of resonant laser ablation" as required by all of the appealed claims herein. Nevertheless, the examiner contends that

> [i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Schmidt et al. method to measure lead in blood because it is generally known to measure lead in blood as shown by Omenetto et al. and because of the Schmidt et al. method detection sensitivity. If one were not concerned with the time required to analyze a single sample, it would have been obvious to one of ordinary skill in the art . . . to measure the sample to exhaustion because one of ordinary skill in the art would have recognized that a statistical distribution of analysis sites per sample is a time saving measure which is used to analyze a sample without using the whole sample when the concentration of the analyte is expected to be

> relatively consistent throughout the sample. It would have been obvious to one of ordinary skill in the art . . . to use a resonant laser ablation technique as taught by Fearey et al. because one of

> skill in the art would have recognized that the technique would improve the detection because of its selectivity for lead as shown by Fearey et al. [Id.; pages 5-6.]

Our review of the references relied upon by the examiner leads us to the determination that the examiner's rejection is founded on an inadequate evidentiary basis to establish the obviousness of the claimed process within the meaning of 35 U.S.C. § 103. For example, not withstanding the examiner's opinion (answer, page 7), Schmidt does not specifically suggest that the use of their laser microprobe-mass-analyzer for measuring lead in blood would be more sensitive than the laser-excited flame atomic-fluorescence spectrometry method of Omenetto as alleged by the examiner. Indeed, Schmidt does not disclose the analysis of lead in blood by their laser microprobe-mass-analyzer or compare such an analysis with a blood lead determination according to the method of Omenetto. While Schmidt (page 623) does generally refer to atomic absorption spectrometry as a technique that existed prior to their work that was useful for routine quantitative analysis with limitations they attempt to circumvent, such a general discussion is hardly a teaching or suggestion regarding the

use of a resonant laser ablation method corresponding to the particularly claimed method herein for determining the amount of lead in a liquid blood sample.

Neither has the examiner convincingly explained how the teachings of Fearey would remedy the above-noted deficiencies of Schmidt and Omenetto. While Fearey (see, e.g., page 1786) does

disclose pulsed laser resonance ionization mass spectrometry in analyzing bismuth and lead mixtures so as to avoid the interference of lead in the analysis of large isotope ratio's in bismuth, Fearey does not teach or suggest resonant laser ablation as a method for measuring lead in blood in a manner so as to lead one of ordinary skill in the art to the herein claimed process. Hence, on this record, we do not agree with the examiner's position regarding the obviousness of the proposed modifications of Schmidt.

We note the mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a prima facie case. See In re Fritch, 972 F.2d 1260, 1266 n.14,

23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992). The determination of obviousness must be based on facts, and not on unsupported generalities. See In re Freed, 425 F.2d 785, 787, 165 USPQ 570, 571 (CCPA 1970). Moreover, there must be some basis in the references for concluding that the claimed subject matter would have been obvious.

In our view, the motivation for the examiner's stated rejection appears to come solely from the description of appellant’s invention in their specification. Thus, the record indicates that the examiner used impermissible hindsight when rejecting the claims. See W.L. Gore & Assoc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984); In re Rothermel, 276 F.2d 393, 396, 125 USPQ 328, 331 (CCPA 1960). Accordingly, we will not sustain the examiner’s rejection for the reasons set forth above and as developed in appellant’s brief.

CONCLUSION

The decision of the examiner is reversed.

REVERSED

CHARLES F. WARREN Administrative Patent Judge	)	
PETER F. KRATZ Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)	

PFK:hh

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